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"PATENT"

## AMENDMENT TRANSMITTAL FORM

In re application of: Robert J. L. Chimenti, et al. ) Before the Examiner  
 U. S. Serial No.: 10/663,566, which is a Continuation Under 37 ) Latoya I. Cross  
 C.F.R. §1.53(b) of U.S. 09/877,625 filed June 8, 2001, which is )  
 a Continuation of U.S. 09/274,744 filed March 23, 1999 )  
 For: METHODS FOR OPTIMAL USAGE AND ) Confirmation Number: 4165  
 IMPROVED VALUATION OF CORROSIVE ) Group Art Unit: 1743  
 PETROLEUM FEEDSTOCKS AND FRACTIONS ) Family Number: P1999J009-US3

Commissioner for Patents  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450

## CERTIFICATION OF FACSIMILE TRANSMISSION

I hereby certify that this paper is being facsimile transmitted to the  
 Commissioner for Patents facsimile number 571-273-8300 on the date shown below.

JOANNE WOLTERS

Type or print name of person signing certification

Signature

Date

Transmittal herewith is an amendment/response in the above-identified application.

Petition for extension of time pursuant to 37 CFR 1.136 and 1.137 is hereby made, if and to the extent, required.  
 The fee for this extension of time is calculated to be \$ \_\_\_\_\_ to extend the time for filing this response  
 until \_\_\_\_\_.

The fee for any changes in number of claims has been calculated as shown below.

CLAIMS AS AMENDED						
(1)	(2) Claims Remaining After Amendment	(3)	(4) Highest Number Previously Paid For	(5) Percent Extra	(6) Rate	(7)
Total Claims	*	Minus	**		x 18.00	
Indep. Claims	*	Minus	***		x 88.00	
MULTIPLE DEPENDENT CLAIM FEE					\$300.00	
FEE FOR CLAIM CHANGES						0

- \* If the entry in Column 2 is less than the entry in Column 4, write "0" in Column 5.
- \*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, write "20" in this space.
- \*\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, write "3" in this space.

The total fee for this RESPONSE TO NOTICE OF NON-COMPLIANT AMENDMENT, including claim  
 changes and any extension of time is calculated to be \$ 0.

☒ Charge \$ 0 to DEPOSIT ACCOUNT NO. 05-1330.

☒ The Commissioner is hereby authorized to charge any additional fees under 37 CFR 1.16 and 1.17 which may be  
 required by this paper, or credit any overpayment, to DEPOSIT ACCOUNT NO. 05-1330. A duplicate copy of  
 this Form is enclosed.

DATE OF SIGNATURE

Post Office Address: [to which correspondence is to be sent]  
 ExxonMobil Research and Engineering Company  
 P. O. Box 900  
 Annandale, New Jersey 08801-0900

ATTORNEY OR AGENT OF RECORD

ESTELLE C. BAKUN

Registration No. 35,054

☒ Pursuant to 37 CFR 1.34(a)

Facsimile Number: (908) 730-3649



27810

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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of  
Robert J. L. Chimenti, et al.

) Before the Examiner  
) Latoya I. Cross

U. S. Serial No.: 10/663,566, which is a  
Continuation Under 37 C.F.R. §1.53(b) of  
U.S. 09/877,625 filed June 8, 2001, which is  
a Continuation of U.S. 09/274,744 filed  
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) Confirmation Number: 4165  
) Group Art Unit: 1743  
) Family Number: P1999J009-US3

For: METHODS FOR OPTIMAL USAGE  
AND IMPROVED VALUATION OF  
CORROSIVE PETROLEUM  
FEEDSTOCKS AND FRACTIONS

Commissioner for Patents  
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Alexandria, Virginia 22313-1450

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CERTIFICATION OF FACSIMILE TRANSMISSION		
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JOANNE WOLTERS	<i>Joanne Wolters</i>	3/1/06
Type or print name of person signing certification	Signature	Date

Sir:

RESPONSE TO NOTICE OF NON-COMPLIANT AMENDMENT

The Notice of Non-Compliant Amendment received in the above-referenced application is not correct. The Legal Instruments Examiner alleges that the status identifiers for claims 23-25 are incorrect. However, they are correct as discussed below.

The above-referenced application, Serial No. 10/663,566, filed September 16, 2003 is a Continuation Under 37 C.F.R. §1.53(b) of U.S. 09/877,625 filed June 8, 2001, which is a Continuation of U.S. 09/274,744 filed March 23, 1999.



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U.S. Serial Number: 10/663,566  
Reply to Office Action of: 2/14/06  
Family Number: 1999J009-US3

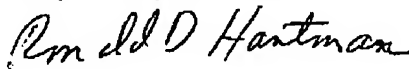
Page 2 of 2

A preliminary amendment for this Continuation application was filed on September 16, 2003 (copy attached). This preliminary amendment included new claims 22-25. The fee sheet included payment for these new claims. A first office action for the above-referenced application, U.S. 10/663,566, was mailed from the USPTO on October 7, 2005 (copy attached). The office action of October 7, 2005, referred to the preliminary amendment. Therefore, the preliminary amendment had been entered in this application. However, the cover sheet of the October 7, 2005 office action only listed claims 1-22 although the "Detailed Action" of the office action referred to claims 24 and 25 on page 2, and to claims 23, 24, and 25 on page 4.

The amendment filed on January 31, 2006 (copy attached) was a response to this first office action. In the amendment filed on January 31, 2006, claim 22 was amended over the claim 22 presented in the preliminary amendment. However, claims 24 and 25 were not amended over the claims previously presented in the preliminary amendment. Therefore, the status identifiers in the amendment filed on January 31, 2006, are correct.

It is requested that the amendment filed on January 31, 2006, be entered into the above-referenced application.

Respectfully submitted,



Ronald D. Hantman  
Attorney for Applicant(s)  
Registration No. 27,796  
Telephone Number: (908) 730-2534  
Facsimile Number: (908) 730-3649

☐ Pursuant to 37 CFR 1.34(a)

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RDH:jmw (2/28/06)

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,566	09/16/2003	Robert J. L. Chimienti	RDH-0315	4165

27810 7590 10/07/2005

EXXONMOBIL RESEARCH AND ENGINEERING COMPANY  
P.O. BOX 900  
1545 ROUTE 22 EAST  
ANNANDALE, NJ 08801-0900

EXAMINER

CROSS, LATOYA I

ART UNIT

PAPER NUMBER

1743

DATE MAILED: 10/07/2005

*Response Due* *Filed 1/31/06*  
*January 7, 2006*

Please find below and/or attached an Office communication concerning this application or proceeding.

RECEIVED  
OCT 14 2005  
TLL

**Office Action Summary****Application No.**

10/853,566

**Applicant(s)**

CHIMENTI ET AL.

**Examiner**

LaToya I. Cross

**Art Unit**

1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

Application/Control Number: 10/663,566  
Art Unit: 1743

### DETAILED ACTION

#### *Claim Rejections - 35 U.S.C. § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:  

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claims 13-16, 24 and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 13 recites the limitation "said orthogonalized IR absorbance spectrum" in line 2.

There is insufficient antecedent basis for this limitation in the claim.

Claim 13 also recites "an accuracy that renders the invention useful to the application".

What do Applicants intend by this statement. What accuracy renders the invention useful?

Claims 16 and 25 contain the limitation "said average prediction error" for which there is insufficient antecedent basis in the claim.

#### *Claim Rejections - 35 U.S.C. § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Application/Control Number: 10/663,566

Art Unit: 1743

4. Claims 1-12 and 17-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,420,041 to Matsushita et al (hereinafter Matsushita et al '041) in view of US Patent 5,681,749 to Ramamoorthy (hereinafter Ramamoorthy '749).

Matsushita et al '041 disclose a method for determining acid value by infrared absorption. The method of Matsushita et al '041 involves determining the acid value attributed to the carboxylic groups based on the infrared absorption spectrum at wave numbers around  $3300\text{ cm}^{-1}$ . The method is used to determine the acid value of mineral oils such as engine oils. See col. 2, lines 32-36 and 48-52. Matsushita et al '041 disclose using wave numbers in the spectral ranges of  $1710\text{ cm}^{-1}$  to  $4000\text{ cm}^{-1}$ , specifically  $3120\text{ cm}^{-1}$  to  $3300\text{ cm}^{-1}$  and  $2530\text{ cm}^{-1}$ . See examples. It appears from figures 2 and 4 that the absorbances are between 1 and 2 absorbance units and the acid values are in ASTM TAN.

Matsushita et al '041 use a calibration curve to represent the correlation between absorbance and acid value. The [Partial] Least Squares method is used to determine coefficients necessary in calculating the acid value from the calibration curve (col. 4, line 50 - col. 5, line 17). Matsushita et al '041 does not teach correlating the IR absorption spectrum with acid values using linear multivariant regression analysis.

Ramamoorthy '749 teaches several mathematical techniques for correlating infrared spectrum to the concentration of any component in the source stream including acid. Ramamoorthy '749 specifically discloses techniques such as Multiple Linear Regression and Partial Least Squares Regression (col. 12, line 26 - col. 13, line 62). It appears that these methods are equivalent and known in the art.

Thus, it would have been obvious to one of ordinary skill in the art to determine acid values of mineral oils by using IR radiation such as disclosed by Matsushita et al '041 and to correlate the IR spectrum to acid value using any of several known mathematical techniques,

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Art Unit: 1743

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including Multivariant Linear Regression. The use of such mathematical techniques allows for the development of quantitative chemical analyses.

With respect to the particular petroleum stream used, as recited in claims 8, 9, 15 and 23, it is submitted that the method would be sufficient to determine acid content in any stream, since the method is taught generally for determining acid content, absent evidence to the contrary.

Therefore, for the reasons set forth above, Applicants' claimed invention is deemed to be obvious within the meaning of 35 U.S.C. 103 in view of the teachings of Matsushita et al '041 and Ramamoorthy '749.

***Allowable Subject Matter***

5. Claims 13-16, 24 and 25 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2<sup>nd</sup> paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claims 13-16 are directed to using orthogonalized IR absorbance spectrum to develop a prediction regression model having regression factors to predict the TAN of the petroleum streams. The prior art of record do not teach such orthogonalization to predict the acid values.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LaToya I. Cross whose telephone number is 571-272-1256. The examiner can normally be reached on Monday-Friday 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Page 5

Application/Control Number: 10/663,566

Art Unit: 1743

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

lic

*M. J. Cole*  
MONIQUE T. COLE  
PRIMARY EXAMINER

<b>Notice of References Cited</b>	Application/Control No. 10/663,568	Applicant(s)/Patent Under Reexamination CHIMENTI ET AL.	
	Examiner LaToya I. Cross	Art Unit 1743	Page 1 of 1

## U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-5,420,041	05-1995	Matsushita et al.	438/61
	B	US-5,681,749	10-1997	Ramamoorthy, Periaswamy	436/55
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

## FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

## NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(e).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

U.S. Patent and Trademark Office  
PTO-892 (Rev. 01-2001)

Notice of References Cited

Part of Paper No. 20051003

"PATENT"

AMENDMENT TRANSMITTAL FORM

In re application of: Robert J. L. Chimenti et al.  
Continuation Under 37 C.F.R. §1.53(b) of U.S. 09/877,625 filed  
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March 23, 1999 [819,501]  
For: METHODS FOR OPTIMAL USAGE AND IMPROVED  
VALUATION OF CORROSIVE PETROLEUM  
FEEDSTOCKS AND FRACTIONS

) Before the Examiner  
) Latoya I. Cross  
)  
) Confirmation Number: 2235  
) Group Art Unit: 1743  
) Family Number: P1999J009-US3

Commissioner for Patents  
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the Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450  
TERESA L. LACHOWSKI  
(Type or print name of person mailing paper or fee)  
Teresa L. Lachowski  
(Signature of person mailing paper or fee)

Transmittal herewith is an amendment/response in the above-identified application.

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Total Claims	* 24	Minus	** 22	2	x 18.00	36.00
Indep. Claims	* 2	Minus	*** 2	-	x 84.00	
MULTIPLE DEPENDENT CLAIM FEE					\$280.00	
FEE FOR CLAIM CHANGES						\$36.00

- \* If the entry in Column 2 is less than the entry in Column 4, write "0" in Column 5.
- \*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, write "20" in this space.
- \*\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, write "3" in this space.

The total fee for this PRELIMINARY AMENDMENT, including claim changes and any extension of time is calculated to be  
\$ 36.00.

☒ Charge \$ 36.00 to Deposit Account No. 05-1330.

☒ The Commissioner is hereby authorized to charge any additional fees under 37 CFR 1.16 and 1.17 which may be  
required by this paper, or credit any overpayment, to Deposit Account No. 05-1330. A duplicate copy of this Form is  
enclosed.

9/12/2003  
Date of Signature

Post Office Address: [to which correspondence is to be sent]  
ExxonMobil Research and Engineering Company  
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Annandale, New Jersey 08801-0900

Ronald D. Hantman  
Attorney or Agent of Record

RONALD D. HANTMAN

Registration No. 27,796

☐ Pursuant to 37 CFR 1.34(a)

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) Confirmation Number: 2235

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<b>TERESA L. LACHOWSKI</b> (Type or print name of person mailing paper or fee)	<i>Teresa L. Lachowski</i> (Signature of person mailing paper or fee)

Sir:

*Pre.*  
PRELIMINARY AMENDMENT

Please amend the above-referenced Continuation Application as set forth  
below.



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